FAA-E-2534
February 5, 1973

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION SPECIFICATION

TRAILER, HEAVY DUTY, FOR GAS TURBINE GENERATOR SETS

1. SCOPE AND CLASSIFICATION

1.1 Scope.- This specification establishes the requirements for a heavy duty trailer suitable for mounting and transporting a gas turbine generator and ancillary equipment. Ancillary equipment shall include but not be limited to all necessary electrical controls and instruments to operate the gas turbine generator, an automatic transfer switch and an exhaust silencer.

1.2 Classification.- Two sizes of trailers of the following capacity ratings of gas turbine generators are covered by this specification:

Size A.	30 KW and 60KW Gas Turbine Generators
Size B.	175 KW Gas Turbine Generator

2. APPLICABLE DOCUMENTS

2.1 FAA standards.- The following FAA standards, of the issues specified in the invitation for bids (IFB) or request for proposals (RFP), form a part of this specification and are applicable to the extent specified herein.

FAA-STD-003 Paint Systems for Structures

FAA-STD-013 Quality Control Program Requirements

2.2 Federal standard.- The following Federal standard, of the issue in effect on the date of the IFB or RFP, forms a part of this specification and is applicable to the extent specified herein.

Fed. STD. 595 Colors

2.3 Other publications.- The following publications, of the issue in effect on the date of IFB or RFP, form a part of this specification and are applicable to the extent specified herein.

American Society for Testing and Materials (ASTM) Standard

ASTM D1010 Methods of Testing Asphalt Emulsions for Use as Protective Coatings for Metal

American Association of State Highway Officials (AASHO)

H-10 Axle Loading Recommendations

Federal Highway Administration, Department of Transportation Regulations

Part 393 Parts and Accessories Necessary for Safe Operation

National Fire Protection Association (NFPA)

No. 10 Portable Fire Extinguishers
No. 70 National Electrical Code (NEC)
No. 385 Flammable and Combustible Liquid Tank Vehicles

(Copies of this specification and the applicable FAA standards may be obtained from the Contracting Officer in the Federal Aviation Administration Office issuing the invitation for bids or request for proposals. Requests should fully identify material desired, i.e., specification, standard and dates. Requests should cite the invitation for bids, request for proposals, or the contract involved or other use to be made of the requested material.)

(Information on obtaining copies of the Federal standard may be obtained from General Services Administration offices in Atlanta; Auburn, Wash.; Boston; Chicago; Denver; Fort Worth; Kansas City, Mo; Los Angeles; New Orleans; New York; San Francisco; and Washington, D.C.)

(Copies of the ASTM standard may be obtained from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pa. 19103.)

(Application for copies of the AASHO Recommendation should be addressed to the Highway Research Board, National Academy of Sciences, Washington, D.C. 20418.)

(Application for copies of the Federal Highway Administration, Department of Transportation Regulations may be obtained from the Superintendant of Documents Government Printing Office, Washington, D.C. 20402.)

(Copies of NFPA publications may be obtained from the National Fire Protection Association, 60 Batterymarch Street, Boston, Massachusetts, 02110.)

3. REQUIREMENTS

3.1 General.- The trailer shall consist of a metal reinforced box frame type chassis, a suspension system, wheels, towing equipment, integral fuel tank, electric brakes, a lighting system and accessories necessary for efficient and dependable operation. The design shall be in general conformance with Figures 1 and 2. The trailer shall meet all requirements of this specification.

3.1.1 Accessories.- The trailer shall be supplied with the following accessories:

(a) Levelling Stands (see paragraphs 3.11.18).
(b) One (1) Combination Tire Iron and Lug Wrench
(c) Two (2) Steel Wheel Chocks (secured but readily removable from trailer).
(d) Built in Level Indicator(s) (Longitudinal and Lateral Axis)
(e) Four (4) Tiedown/Lifting Rings (see paragraph 3.11.12).
(f) Three (3) Emergency Parking Reflectors (see paragraph 3.15.4).
(g) Towing Vehicle Brake Kit (see paragraph 3.14.1).
(h) Landing Leg and Load Bearing Plate (see paragraph 3.11.8).

3.2 Precedence of specifications.- In the event of a conflict between the requirements of this specification and the documents listed in Section 2, this specification shall have precedence.

3.3 Materials and workmanship

3.3.1 Materials.- All materials used in the manufacture of the vehicle shall be new, fire retardant, of high quality, and free from corrosion, structural and other defects.

3.3.2 Workmanship.- The trailer shall display a high standard of workmanship. It shall withstand all normal road shock and vibration without damage to welded or riveted connections. All parts shall be clean of sand, dirt, pits, scale, flux and other harmful extraneous material. External and other surfaces exposed to operating or maintenance personnel shall be smooth and edges shall be rounded or beveled.

3.4 Welding

3.4.1 Welds.- The surfaces of parts to be welded shall be free of rust, scale, paint, grease and other foreign matter. Spot, tack or intermittent welds shall not be permitted. Fillet welds shall be provided as necessary

to reduce stress concentrations. All welds joining the side members, cross members and towing tongue shall be full length with 100% penetration of the intersection.

3.4.2 Welders.- Any welder performing welding operations on the trailer shall have been certified and qualified by at least one of the following codes:

(a) Standard Qualification Procedure of the American Welding Society.

(b) Welding Qualification of the ASME Boiler and Pressure Vessel Code.

3.5 Interchangeability.- Trailers of the same classification furnished under this specification, on a given contract, shall be identical with each other and all parts of one trailer shall be interchangeable with corresponding parts of the other trailers. All components shall be identified by a part number. No two components, having a different function or being physically different on any given contract, shall bear the same part number. The components comprising the trailer shall be the standard products of a recognized manufacturer regularly engaged in the manufacture of such components and have been on the market for a minimum of two years prior to the invitation for bids. The use of specially fabricated components, modified standard components or components not meeting these criteria must have the specific approval of the Contracting Officer. All components shall be installed, used, and operated in a manner compatible with the component manufacturer's recommendations.

3.6 Painting.- The trailer body and chassis shall be painted in accordance with Standards FAA-STD-003 and Fed. STD. 595. Paint color shall be Aviation Orange #12197 of Fed. STD. 595.

3.7 Protective cover.- Suitable weather protection shall be provided for materials and equipment during manufacture and during storage of trailers.

3.8 Safety requirements.- The trailer shall operate as described in this specification without danger to operating personnel, other vehicles on the road or the towing vehicle. It shall conform to the Federal Highway Administration, Department of Transportation Regulations (FHA-DTR) Part 393.

3.8.1 Step surfaces.- The upper, outer surfaces of steps and wheel fenders shall be covered with a nonskid material to prevent operating personnel slipping when using the steps or the fender as a step. This nonskid material shall be sand impregnated paint or other permanent nonskid surface. Materials requiring pressure sensitive adhesives for installation shall not be used.

3.8.2 Fuel warning.- The integral fuel tank of the trailer causes it to be classified as a "tank vehicle" in accordance with the National Fire Protection Association Publication #385. Therefore, the word "FLAMMABLE" shall be painted on both sides and the rear of the trailer, in letters a minimum of three inches high. Lettering color is optional but shall be of high contrast with the background.

3.8.3 Fire extinguisher.- A 10 pound, hand portable fire extinguisher of the multipurpose dry chemical type with permanent shut off shall be provided. It shall be rated to combat Class A, B, and C fires per N.F.P.A. No. 10. The extinguisher shall be attached to a permanent mounting bracket on the trailer by means of a quick disconnect clamping device. A dial gauge shall be provided on the extinguisher to indicate its operable condition. The extinguisher shall meet the requirements of the Underwriters' Laboratories, Inc. (U.L.) and shall be suitable for operation between minus 40°F and plus 120°F.

3.8.4 Safety chains.- Two safety chains of nominal 1/2 inch high test steel, with an inside width of 3/4 inch and a proof test capability of 13,700 pounds minimum shall be provided. Each chain shall have a minimum breaking strength equal to the gross weight of the trailer in a fully equipped condition. The length of chain provided shall be enough to allow the trailer to assume a position of 50 degrees to the towing vehicle without binding or undue strain.

3.9 Data plate and markings.- A nonferrous metal data plate, approximately 3 inches by 5 inches, shall be installed at the lower front exterior corner on the right side of the vehicle. The data plate shall contain the following information in the order listed:

(Equipment title) (to be furnished by the Contracting Officer)
Manufactured by (Manufacturer's Name) for
FEDERAL AVIATION ADMINISTRATION
Contract number: _____
Serial number: _____
Curb weight: _____ pounds
Gross weight, maximum: _____ pounds

WARNING - DO NOT TOW THIS TRAILER FASTER THAN:
50 MPH OVER IMPROVED ROADS - 10 MPH OVER UNIMPROVED ROADS.

The manufacturer's name shall not be visible on the finished trailer except on the data plate. This restriction is not intended to preclude die-stamping of the manufacturer's name on individual components, such as the chassis, axle, etc.

3.9.1 Marking.- The gross vehicle weight (GVW) shall be marked on each side of the trailer near the front in a clear and discernible manner. The tire pressure shall be marked on the side members near the wheels. Markings, as specified by the Contracting Officer, shall be placed on the unit.

3.10 Performance

3.10.1 General.- The trailer shall be capable of being towed at 50 miles per hour over dry, smooth, improved and paved roads and at 10 miles per hour over unimproved roads, open fields, rolling hills and rough cross country terrain without damage to the trailer or equipment mounted thereon.

3.10.2 Tracking.- The trailer shall follow, without deviating more than three inches to either side (dampened oscillation) the path of the towing vehicle moving in a straight line over a dry, smooth, level, paved road per FHA, DTR Part 393, paragraph 393.71(h)(7).

3.10.3 Stopping.- Service brakes of the 12 volt electric type shall be supplied on each of the wheels. When applied, they shall be capable of stopping the trailer, in a fully loaded condition, within a braking distance of thirty (30) feet from a speed of twenty (20) miles per hour when tested on a dry, smooth, level, paved road free of loose gravel per FHA, DTR Part 393, paragraph 393.52.

3.10.4 Turning ability.- When coupled to a towing vehicle operating in its minimum turning circle, the trailer shall follow without cramping or side slipping. The trailer shall be capable of assuming an angle of 50 degrees to the towing vehicle without damage to either or interference between vehicles.

3.11 Construction

3.11.1 General.- The trailer shall be designed and constructed to withstand the stresses imposed by the loads and operations specified herein. The design stresses of all materials shall conform to standard structural and mechanical engineering practices. It is not the intent of this specification to preclude the use of any material or method of construction provided the contractor can show analytically, to the Contracting Officer's satisfaction, that the material or method will satisfy the requirements of this specification.

3.11.2 Chassis frame.- The trailer chassis shall be constructed of steel or aluminum alloy material of structural shapes, tubes and plates, as required for the design configuration. All chassis joints shall, except as noted, be of the permanent riveted or welded type capable of transmitting the maximum resultant loads and stresses imposed by the conditions of loads.

3.11.3 Tongue.- The tongue shall be an extension of the frame side members V notched, bent and the V's welded closed after forming. The forward end of the tongue shall terminate in an area suitable for welding a rectangular faceplate to the ends of the side members. A matching plate of the same dimensions shall be manufactured with the lunnette eye welded to it with reinforcing fillets. The two plates shall be match drilled and bolted together with six (6) high tensile strength bolts.

3.11.4 Center section.- The center section shall be covered with 10 gauge thick, steel plates, top, sides, and bottom, to form the integral fuel tank.

3.11.5 Supports.- Two channels shall be welded to the outside top of the trailer to form a structural support for mounting the turbine generator package and the exhaust silencer. Rectangular sole plates 1/2 inch thick shall be welded to the trailer deck and threaded holes provided to secure the turbine to the trailer.

3.11.6 Spare mount.- A hardpoint mount for the spare tire shall be welded on the frame as shown on Figure 2.

3.11.7 Integral fuel tank.- An integral fuel tank shall be built into the center section of the trailer. It shall have a minimum capacity of 150 gallons for Size A and 290 gallons for Size B. A suitable gauge shall be mounted on the platform to show empty through full condition of the tank. The tank shall be equipped with baffles to prevent sloshing of fuel when partially full. The bottom of the tank shall be shaped so as to form a depression (or sump) for collecting condensation and sediment; a drain or drains with captive removable plugs shall be located at the bottom of this depression. Provisions shall be made in the fuel tank for an external fuel fill connection, sized at 2 inches I.D. minimum and shall be equipped with a captive (chained) removable screen of approximately 10 mesh. Means shall be provided to prevent damage to the screen when a fuel nozzle is inserted into the filler neck. The fuel fill pipe shall extend into the tank to 3 inches from the bottom of the tank. A cap shall be furnished for the fuel fill line. This cap shall be painted with fuel resistant paint and shall be capable of being padlocked. A 1 inch I.D. fuel vent line with a tamper-proof and weatherproof cap shall be provided and extended 18 inches above the base portion of the trailer. Fuel supply and fuel return openings shall be provided for on the trailer to be used for flexible fuel lines between the trailer fuel tank and the gas turbine generator set mounted on the trailer. Fuel lines shall be 3/8 inch diameter for the Size A trailer and 1/2 inch diameter for the Size B trailer. The openings shall be clearly stencilled with the words "SUPPLY" and "RETURN" using a fuel resistand paint.

3.11.8 Landing leg and load plate.- The landing leg provided with the trailer shall have a hand operated crank to raise or lower the towing eye into position for hook-up to the towing vehicle. The bottom of the landing leg in contact with the road shall be equipped with a load bearing plate. The landing leg and load bearing plate shall be capable of supporting a load of 1200 pounds.

3.11.9 Fenders.- Fenders, 9-12 inches wide, shall be provided for each wheel or combination of wheels.

3.11.10 Rear bumper.- A rear bumper, capable of affording adequate protection to the mounted equipment and the integral fuel tank shall be permanently affixed to the rear of the trailer. It shall meet the requirements of FHA, DTR Part 393, paragraph 393.86.

3.11.11 Lunnette eye.- The lunnette eye provided shall be a 3 inch I.D. by 6-1/4 inches O.D. steel ring. The plate to which it is welded is multi-hole drilled to provide adjustment to the pintle hook of the towing vehicle. The welded assembly shall be bolted to the trailer by means of six high tensile strength bolts.

3.11.12 Tiedown/lifting ring attachments.- Four tiedown/lifting rings shall be provided on the trailer. The rings shall be located on both sides of the trailer at the fore and aft ends to best distribute the center of gravity between the four lifting rings. Each lifting ring shall be capable of lifting 10,000 pounds. Provisions shall be provided to secure the tiedown/lifting rings when not in use.

3.11.13 Access steps.- Access steps of 10 gauge steel, coated with sand impregnated paint, shall be provided at the front and rear of each fender to aid maintenance and operating personnel in boarding the trailer. The front steps shall be triangular in shape. The rear access steps may be triangular or rectangular.

3.11.14 Tool storage compartment.- Each trailer shall have a 12 gauge steel raintight storage compartment located on the trailer as indicated on Figure 2. The compartment lid shall be made of the same material as the rest of the platform. The compartment shall be provided with a hinged lid and locking hasp to allow for padlocking. The storage compartment shall be large enough to house the following equipment:

(a) Tools for the trailer.
(b) Necessary items that are removable from the trailer.
(c) Special tools for the gas turbine unit if required by the solicitation document.
(d) Portable fire extinguisher.
(e) Two (2) twenty (20) feet lengths of flexible fuel lines.

Minimum compartment dimensions shall be 12 inches wide by 24 inches long by 12 inches high. It shall be the contractor's responsibility to assure that all the above items can be stored in the compartment in a neat and organized manner.

3.11.15 Battery and enclosure.- A 12-volt dry cell battery and weatherproof enclosure shall be provided for the emergency braking system. The enclosure shall be provided with hasp and padlock features. Weatherproof entrances for all necessary cables shall be provided.

3.11.16 Cable compartment.- A raintight compartment shall be provided as a part of the trailer to store the temporary connecting cables in accordance with the following table.

Purpose	Trailer Classification		
	Size A		Size B
	30 KW	60 KW	
Power Connections	6 - 1/C #1 AWG	8 - 1/C #1/0 AWG	16 - 1/C #3/0 AWG
Battery Charger	3-wire cable #12 AWG with male plug	3-wire cable #12 AWG with male plug	3-wire cable #12 AWG with male plug
Interlock Cables	2 - #12 AWG	2 - #12 AWG	2 - #12 AWG

NOTES:
1. All cables will be 30 feet in length.
2. All power cables will be extra flexible stranded welding cables.
3. Battery charger and interlock cables will be Type SO.

The compartment shall have a hinged raintight cover and be provided with a padlock and hasp. The cable compartment shall be sized so that the cable may be coiled inside the compartment and have no bends with a radius less than eight (8) cable diameters. A minimum clearance of one inch shall be provided from the top of the cable coils to the cover when the cover is closed.

3.11.17 Dimensions and clearances.- Trailer dimensions and clearances are given in Table I. Clearances are measured with the trailer fully loaded and resting on the landing leg on level ground with the trailer leveled. Fully loaded is defined as follows: Size A, 2,000 pounds plus weight of trailer with a full fuel tank and all accessories to be furnished with the trailer; Size B, 3,000 pounds plus the weight of trailer with a full fuel tank and all accessories to be furnished with the trailer.

TABLE I

Description	Trailer Size A	B
Overall length (maximum)	11'-6"	15'-0"
Overall width (maximum)	6'-0"	8'-0"
Clearance height (maximum) (Trailer axle above ground)	1'-6"	1'-6"
Landing leg travel (maximum)	1'-3"	1'-3"

3.11.18 Levelling stands.- Two levelling stands shall be provided with the Size A trailer and three levelling stands shall be provided with the Size B trailer. Purpose of the stands will be (a) to level the unit while operating it on rough terrain and (b) to lift one side of the trailer to replace a tire. Levelling stands shall be placed on each of the rear corners just behind the wheels and where a third levelling stand is required, it shall be located at the trailer frame adjacent to the tongue. The levelling stands may be built into the trailer chassis or frame, firmly welded to the trailer chassis or frame, or be independent of the trailer chassis or frame. When the latter type is furnished, the stands shall be stored in the tool compartment in such manner that they shall not be loose. When separate from the trailer chassis or frame, the top of the levelling stands shall be so as to fit firm and tight to the part of the chassis or frame where the lift will be exerted. Each levelling stand shall have a hand operated crank properly geared to facilitate levelling or raising that corner of the unit sufficiently high to raise the wheel (or wheels) off the ground. The bottom of the levelling stands shall be equipped with a fixed load bearing plate. Each levelling stand shall be capable of supporting the full weight of the trailer, including the power plant, for an indefinite period of time.

3.11.19 Weight distribution.- The weight of the trailer shall be distributed evenly on all wheels that support the unit. The weight of the trailer shall be designed such that when the trailer is fully loaded as defined in paragraph 3.11.17 and has a full fuel tank, the effective weight on the towing eye shall be between 200 and 500 pounds for size A trailers and between 500 and 1,000 pounds for size B trailers.

3.12 Axles and suspension.- Axle loads shall not exceed system H 10 contained in AASHO Recommendation. To keep road transmitted shock and vibration to a minimum, the axles shall be suspended from the frame by leaf type springs. A single axle design may be used for Classification si size A and two axle designs shall be used for Classification size B.

3.13 Wheels, hubs, tires, and tubes.- The wheels supplied shall be 15 by 6.00 semi drop center, split rim and the hubs shall be five slot, anti-friction bearing. The tires shall be 8.55 - 15, 4 ply for size A trailers and 7.50 - 15, 12 ply for size B trailers. The inner tubes shall be heavy duty type. Tire ratings with dual axle construction and utilizing 5^{o} taper rim construction shall be over 2,000 pounds at 50 MPH, at 75 psi. Single axle trailers shall have two wheels and one spare; dual axle trailers shall have four wheels and one spare.

3.14 Brake system.- The brakes supplied on each of the wheels of the trailer shall be 12 volt electrically operated. Power supply for normal braking shall be from the towing vehicle electrical system. System wiring shall be as shown on Figure 1 of this specification.

3.14.1 Towing vehicle brake kit.- A towing vehicle brake kit as shown on Figure 1 shall be supplied as a loose accessory item for installation by the Government in the towing vehicle. This kit when connected shall provide two methods of applying brakes to the trailer. The trailer brakes may be applied by the towing vehicle operator either by applying the towing vehicle foot brake or by moving the hand actuated control lever supplied in the kit. The hand operated lever moves a variable resistor through a stopping range of slight drag to wheel lock-up. When the towing vehicle brake is applied, hydraulic pressure from the master cylinder moves the resistor through the same range. The battery shown on Towing Vehicle Wiring Diagram, Figure 1, is not to be furnished as part of the trailer.

3.14.2 Breakaway switch.- In the event the trailer should breakaway from the towing vehicle, a breakaway switch shall activate the trailer brakes to bring it to a stop, in accordance with Figure 1 and FHA, DTR Part 393, paragraph 393.43. Power to this switch shall be supplied from a 12 volt dry cell battery independent of the normal braking system. The switch shall be activated by the rearward movement of the trailer relative to the towing vehicle by means of a wire cable attached to the switch and to the towing vehicle.

3.15 Lights, reflectors, and license plate bracket.- The following lights, reflectors, and bracket shall be provided on the trailer.

3.15.1 Signal lights.- Two combination stop, running, and turn signal red lights shall be provided. One on the left and one on the right rear end of the trailer. They shall be capable of being seen from a distance of 500 feet to the rear of the trailer under day or night time conditions. They shall meet the requirements of FHA, DTR Part 393, paragraphs 393.14, 393.19, 393.22 and 393.25.

3.15.2 Clearance lights.- Two amber and two read clearance lights shall be provided. The amber lights shall be mounted near the front portion of the fenders on the extreme left and right sides of the trailer. The red lights shall be mounted near the rear extreme left and right sides of the trailer. They shall meet the requirements of FHA, DTR Part 393, paragraphs 393.14 and 393.25.

3.15.3 Reflectors.- Reflectors shall be provided and mounted in accordance with FHA, DTR Part 393, paragraphs 393.14, 393.25 and 393.26.

3.15.4 Emergency parking reflectors.- Three emergency parking reflectors, as mentioned in paragraph 3.1.1 of this specification, for placement along the road in case of breakdown, shall be provided. Reflector color shall be red.

3.15.5 License plate light and bracket.- A license plate light conforming to FHA, DTR Part 393, paragraph 393.25, shall be provided. In addition a license plate mounting bracket shall be provided on the trailer rear bumper or cable box.

3.16 Electrical wiring.- All the electrical wiring used on the trailer shall conform to FHA, DTR Part 393, paragraphs 393.27, 393.28, 393.29, 393.32 and 393.33. The size and length of wire shall be specified on the trailer manufacturer's drawings. The feed wires to the trailer wiring shall be protected by overcurrent protection (fuses or automatic circuit breakers) on the towing vehicle per the requirements of the National Electrical Code #70.

3.17 Undercoating.- Each trailer shall be undercoated with a commerical sandless material meeting the water resistant requirements of ASTM D1010. Coating shall be applied to underbody and underchassis surfaces to a minimum thickness of 1/16 inch except that drain holes, lubrication points, heavy castings and suspension components shall be kept free of coating material.

3.18 Instruction book.- An instruction book manuscript shall be prepared for each size unit indicated in the contract schedule. The manuscript shall comply with the applicable sections of FAA-D-2494/1, Part 1 - Preparation of Manuscript Copy and all of FAA-D-2494/2, Part 2 - Preparation of Manuscript Copy and Reproducible Artwork, which comprise the specification for Instruction Book Manuscripts Technical: Equipment and Systems, Requirements. The type of manuscript shall be Type A - Equipment Unit Manuscript.

3.19 Drawings.- The contractor shall furnish one reproducible and three copies of drawings as specified in the contract schedule. Drawings shall demonstrate compliance with the contract documents and shall include, but not limited to the following:

(a) Certified outline drawings with all pertinent dimensions, connection sizes and locations and weights.

(b) Illustrated parts assembly drawings of the equipment with complete identification of parts and materials.

(c) Wiring diagrams and descriptions of the sequence of operation of the electrical braking and lighting circuits.

4. QUALITY ASSURANCE PROVISIONS

4.1 Inspection.- Each trailer shall be inspected at the contractor's plant. The contractor shall perform or have performed the inspections and tests required in accordance with FAA Standard FAA-STD-013. One trailer of each size indicated in the contract schedule shall be given a complete type test, all other trailers shall be given a production test. Acceptance does not relieve the contractor of the obligation to meet performance requirements not tested for by the Government representative. The contractor shall furnish the necessary test equipment including the towing vehicle, fuel, and labor.

4.2 Test procedures.-

4.2.1 Type tests.- Type tests are tests accomplished on the samples submitted for qualification as a satisfactory product. Type tests may be conducted by the manufacturer or, at the manufacturer's option, by an independent accredited testing agency. Such testing agency, if utilized, shall be approved by the Contracting Officer prior to the setup and performance of any test.

4.2.2 Production tests.- Production tests are those tests performed on each of the remaining sets upon successful completion of the "type tests".

4.3.1 Type tests.-

4.3.1.1 Visual inspection.- A visual inspection shall be made of the test unit to determine compliance with this specification. The inspection shall verify all physical aspects of the unit such as construction, structural aspects, all compartmentation, lights, reflectors and wiring.

4.3.1.2 Weight distribution test.- The trailer, in the fully loaded configuration defined by paragraph 3.11.17 and for each size classification specified, shall be tested to verify the proper weight distribution. Test data shall be taken to demonstrate that the effective weight on the towing eye shall be between 250 and 500 pounds for size A trailers and 500 and 1,000 pounds for size B trailers in compliance with paragraph 3.11.17 of this specification.

4.3.1.3 Landing leg tests.- The landing leg and load plate shall be submitted to a load of 1,200 pounds for five minutes. The landing leg and load plate shall withstand this load without signs of deforming to demonstrate compliance with paragraph 3.11.8 of this specification. In addition, it shall be demonstrated that the landing leg travel meets the requirements of the travel distance specified in Table I of this specification. Travel of the landing leg shall be tested under a load of 1,200 pounds.

4.3.1.4 Tie down/lift ring test.- Each tie down/lifting ring shall be submitted to a lift test with a force equal to twice the fully loaded configuration as defined in paragraph 3.11.17 for a period of one hour. Upon completion of each test, the unit shall be examined for any structural deformations or deflections. Upon completion of the above test, the entire unit shall be lifted off the ground a minimum height of one foot utilizing all lift rings for a period of fifteen (15) minutes. Examination shall again be made for any structural deformations or deflections.

4.3.1.5 Turning tests.- The trailer in a fully loaded condition as defined in paragraph 3.11.17 shall be towed in its minimum circle. The trailer shall follow without crimping or slide slipping and shall demonstrate the capability of assuming an angle of fifty (50) degrees to the towing vehicle without damage to or interference between the two vehicles.

4.3.1.6 Towing test.- The trailer in a fully loaded condition as defined in paragraph 3.11.17 shall be towed for a distance of fifty (50) miles over improved roads at speeds up to 50 mph and for a distance of five (5) miles over unimproved roads at speeds up to 10 mph. The trailer shall exihibit trailing characteristics as specified in FHA, DTR Part 393, paragraph 393.71(h)(7). The towing vehicle shall be equipped with the towing vehicle brake kit specified in paragraph 3.14.1 of this specification and all testing shall be accomplished with the towing vehicle brake kit in operation. The towing vehicle shall be rated to tow a vehicle of not less than the gross weight of the trailer being tested.

4.3.1.7 Braking test.- The trailer in a fully loaded condition as defined in paragraph 3.11.17 shall be subjected to a braking test. The trailer shall be towed on dry, level pavement at a speed of 50 mph on an improved road and be brought to a stop. The trailer shall be stopped without undue swerving and swaying of either vehicle. The trailer shall be capable of withstanding the above test without damage thereto, including breakage, permanent deformation or loosening of any part and without any electrical or mechanical damage. The test shall be repeated on unimproved roads at a speed of 20 mph with the same results. The test shall also meet the requirements of paragraph 3.10.3. The towing vehicle shall be the same vehicle used for the towing test.

4.3.1.7.1 Breakaway switch test.- The trailer in a fully loaded condition as defined in paragraph 3.11.17 shall be connected to the towing vehicle and placed in forward motion. The towing vehicle shall be placed in neutral

and the breakaway switch disengaged. The trailer shall meet the requirements of paragraph 3.14.2 of this specification and come to a complete stop, unassisted by the towing vehicle, without excessive veering or swaying.

4.3.1.8 Lights.- With the trailer properly attached and electrically connected to the towing vehicle all lights required on the trailer shall be tested to demonstrate proper function and operation. Lights shall be activated from the towing vehicle. Each electrical circuit of the trailer shall be meggered with a 500 volt DC megger to demonstrate that the system is free from shorts and grounds. Minimum resistance shall be 50 megohms. All readings shall be recorded.

4.3.2 Production tests.- Every trailer manufactured and furnished to the procuring agency as a result of this solicitation shall be subjected to the following tests.

4.3.2.1 Visual inspection.- In accordance with paragraph 4.3.3.1.

4.3.2.2 Braking test.- In accordance with paragraph 4.3.3.7 and 4.3.3.7.1 of this specification.

4.3.2.3 Light test.- In accordance with paragraph 4.3.3.8 of this specification.

5. PREPARATION OF DELIVERY

5.1 Towaway condition.- Each trailer shall be complete in accordance with this specification and in immediate towaway condition. Unless otherwise specified in the contract, the trailer shall be finish painted and lubricated in a "ready to roll" condition. All unprotected surfaces shall be coated with a rust inhibiter to prevent oxidation during manufacture or subsequent storage and as noted in paragraph 3.6 of this specification.

5.2 Loose items.- Blocking plates and all other equipment to be shipped inside the trailers shall be boxed as required and securely fastened to remain in place during delivery of the trailers to their destination.

5.3 Servicing and adjusting.- Prior to acceptance of the trailers by the Government, the contractor shall completely service and adjust each trailer for operational use including at least, but not limited to, the following: adjustment of brake system; inflation of tires; and complete lubrication of chassis, suspension systems, and running gear with grades of lubricants recommended for the ambient temperature at the delivery point.

6. NOTES

6.1 Note on information items.- The contents of the subparagraphs below are only for the information of the Contracting Officer. They are not contract requirements, nor binding on either the Government or the contractor, except to the extent that they may be specified elsewhere in the contract as such. Any reliance placed by the contractor on the information in these subparagraphs is wholly at the contractor's own risk.

6.2 Ordering data.- Procurement documents should specify:

(a) Title, number, and date of this specification.
(b) Size of trailer required (1.2).
(c) Number of trailers required.
(d) Quantity of additional instruction books or temporary instruction books to be furnished and shipped to allow time for printing of the official instruction books.
(e) Serial numbers to be provided at time of award of contract.

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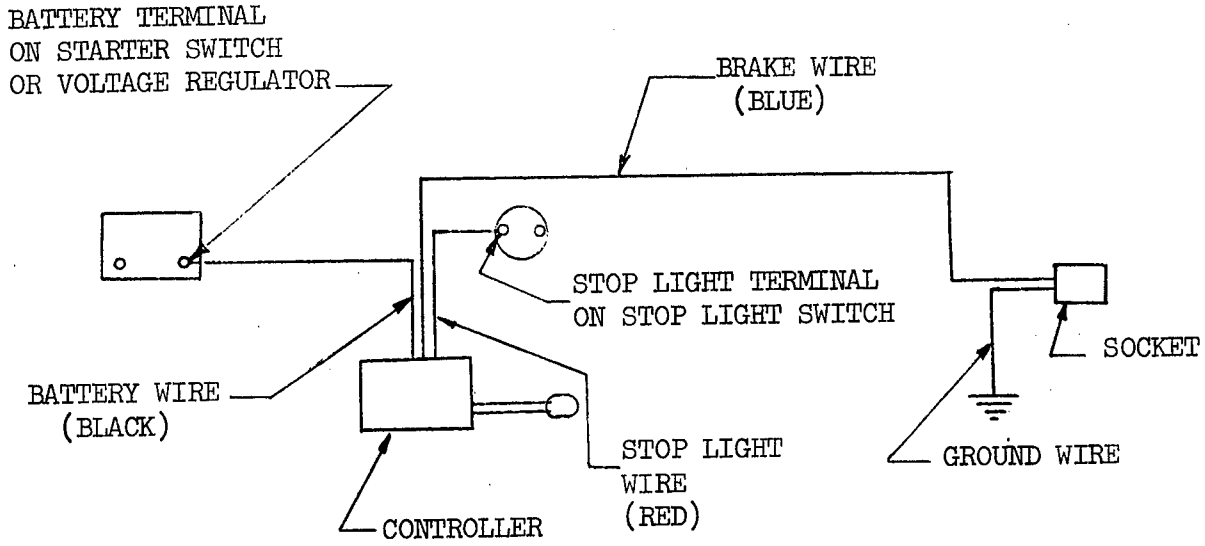
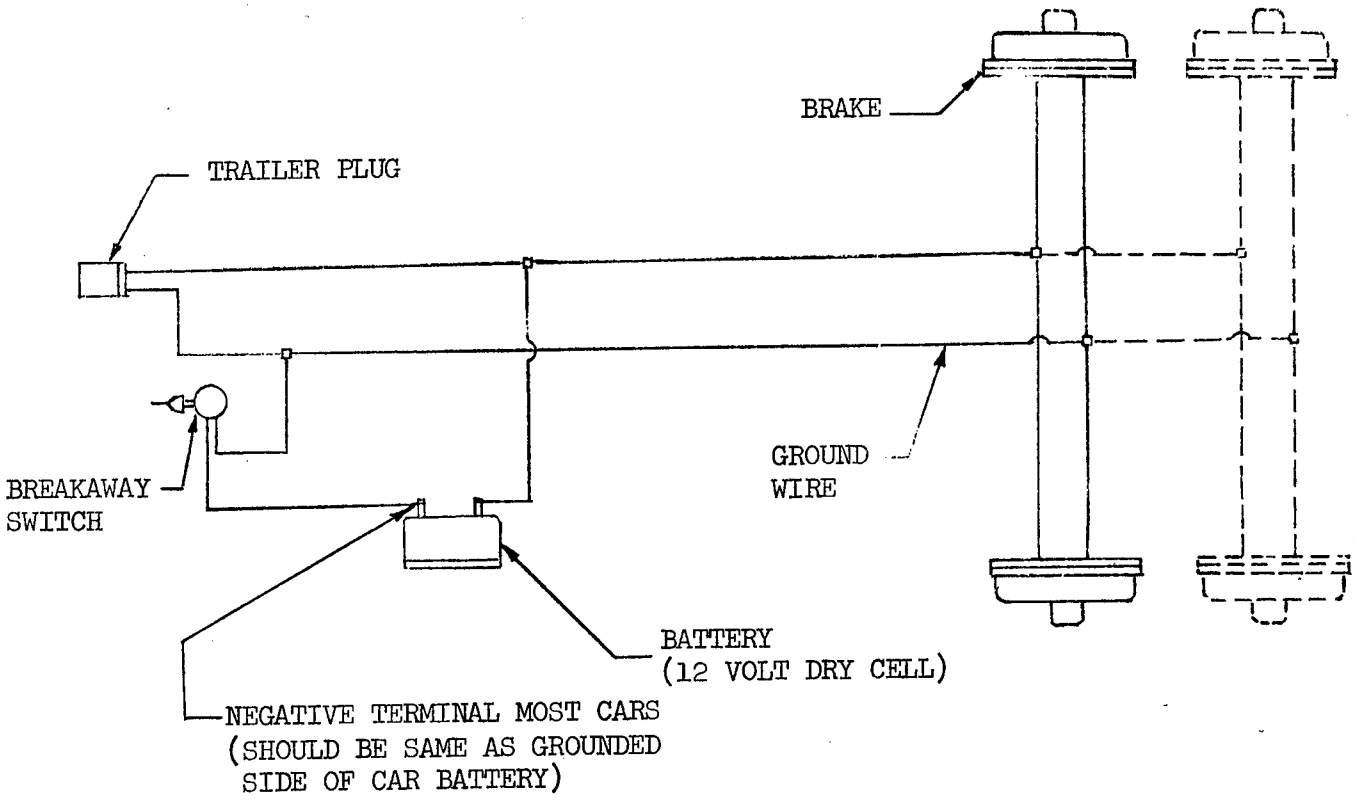
BRAKING SYSTEM WIRING DIAGRAM
(FIGURE 1)

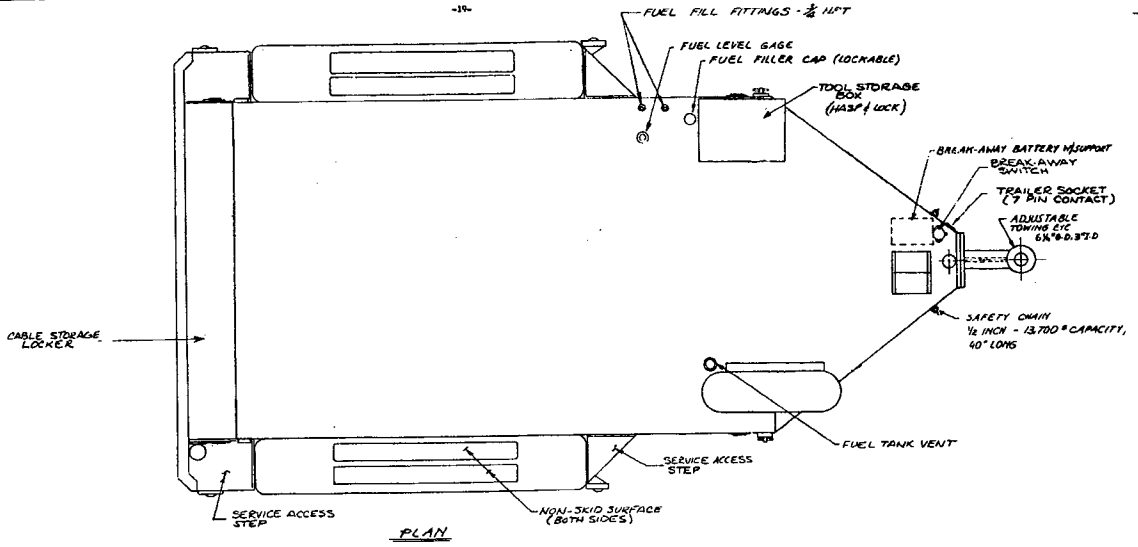


TOWING VEHICLE

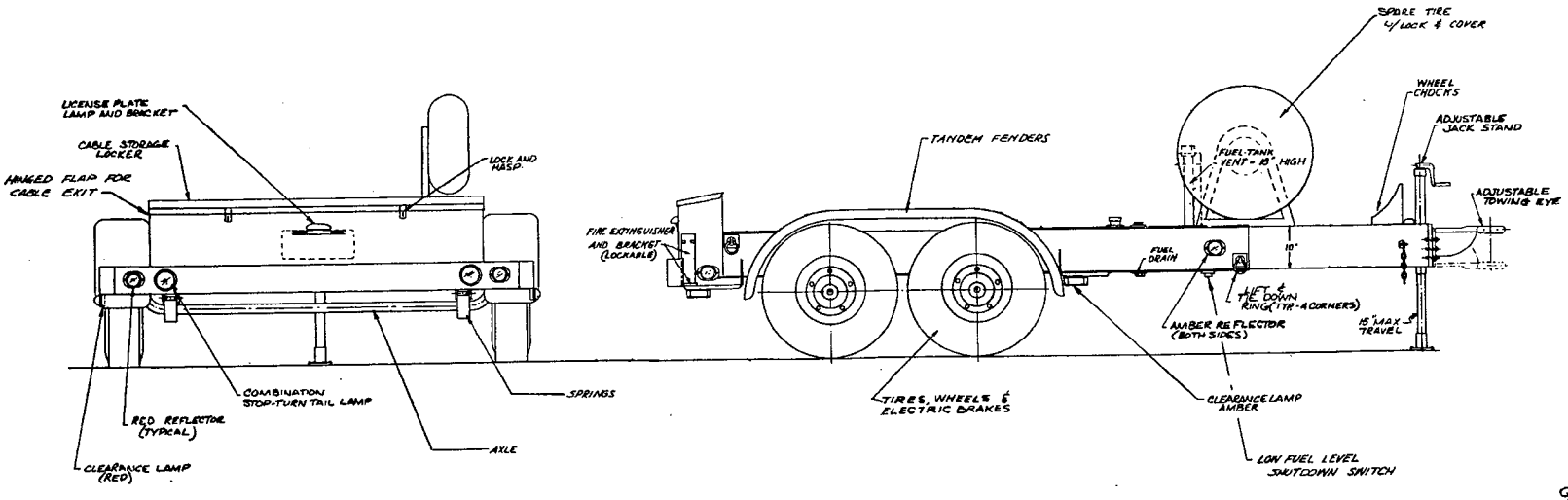


TRAILER

NOTE
TANDEM WHEELS AND FENDERS REQUIRED WITH 175 KW MOBILE UNITS.

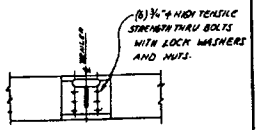


PLAN



END VIEW

ELEVATION



FRONT VIEW OF TOWING ASS'Y

FIGURE 2
TRAILER FOR MOBILE
GAS TURBINE GENERATOR

D-5956